



******THIS IS A NEW IM. – PLEASE READ CAREFULLY.******

**FIELD METHOD TO DETERMINE PERCENTAGE OF
FRACTURED PARTICLES IN COARSE AGGREGATE GRAVELS**

SCOPE

This test method is used for evaluating the crushed content of gravel by determining the amount of fractured particles. For this method, a fractured face is an angular or broken surface caused by mechanical crushing. A face is considered a “fractured face” whenever one-half or more of the surface has been broken, with sharp and well defined edges, when looking directly at the fracture. A fractured particle is a particle having at least one fractured face.

PROCEDURE

A. Apparatus

1. Sieves - a 3/8 in. (9.5 mm) sieve having wire cloth conforming to AASHTO M-92
2. Oven or hot plate
3. Balance - A balance having a capacity of at least 5000 grams, accurate to 0.5 gram

B. Sample

Obtain a representative sample by appropriate methods as detailed in Materials IM 301. The weight of the representative sample after reduction must be large enough to yield a minimum of 2500 grams of material after sieving over a 3/8 in. (9.5 mm) sieve.

C. Sample Preparation

The sample must be sieved on the 3/8 in. (9.5 mm) sieve and the material passing the 3/8 in. (9.5 mm) sieve is discarded.

D. Test Procedure

1. Wash and decant the sample to remove dust from the surface of the aggregate particles.
2. Dry the sample to a constant mass (weight) in an oven at a temperature of $230^{\circ}\text{F} \pm 9^{\circ}\text{F}$ ($110^{\circ}\text{C} \pm 5^{\circ}\text{C}$) or on a hot plate at low heat setting. Cool and weigh total sample to the nearest 0.5 gram and record as: *Dry Mass (Wt.) of Original Sample*.
3. Spread the sample out on a flat surface. Visually examine the aggregate particles and remove fractured aggregate particles.
4. Weigh the total amount of fractured particles to the nearest 0.5 gram.

E. Calculations

1. Calculate the percent of fractured particles based upon the total mass (weight) of the sample [plus 3/8 in. (9.5 mm)].
- 2.

PERCENT FRACTURED PARTICLES =

$$\frac{\text{Dry Mass (Wt.) of Fractured Particles}}{\text{Dry Mass (Wt.) of Original Sample}} \times 100$$